

Operating Manual

9.02

FDD Spring-loaded brake

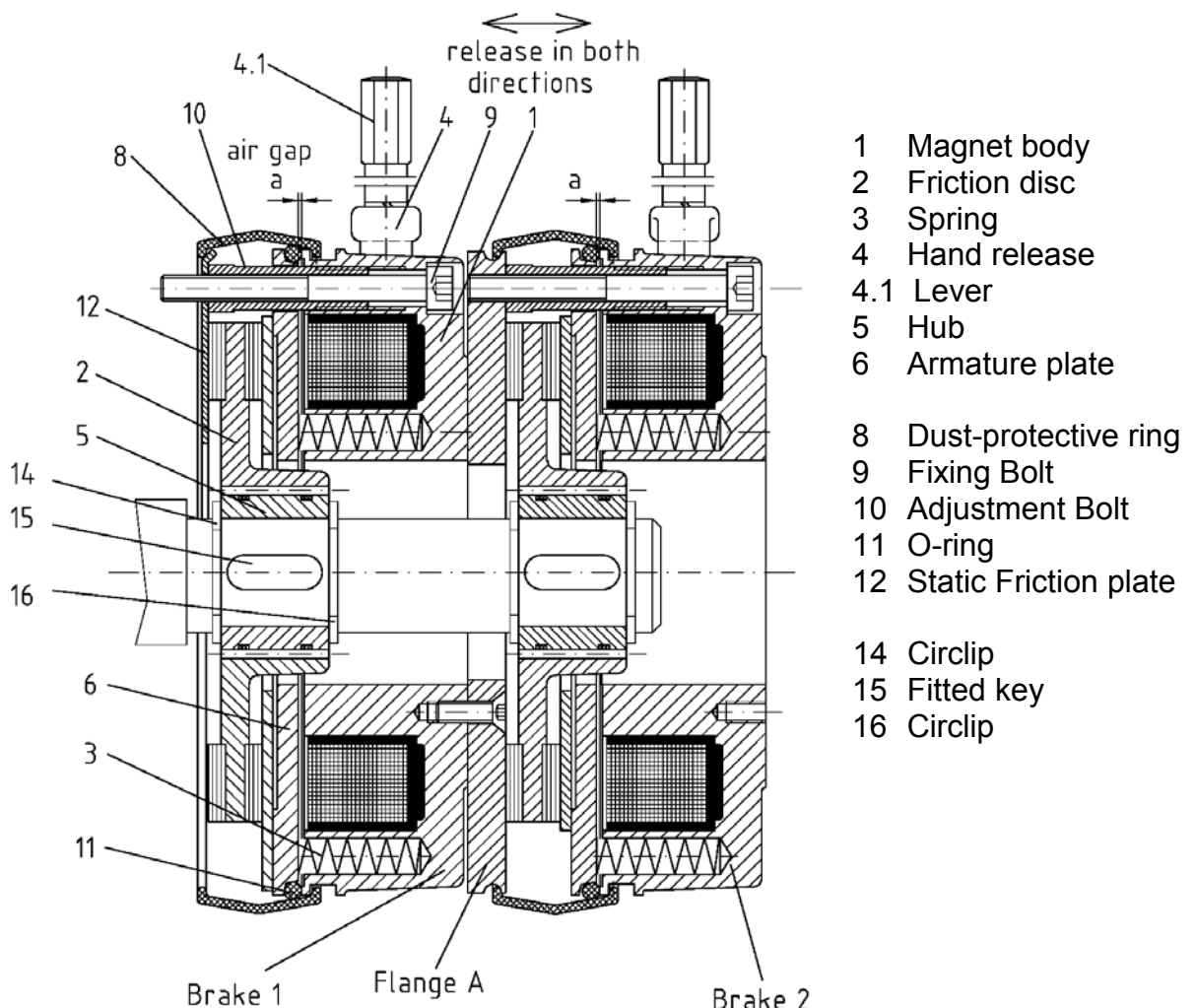
Please read manual carefully before operating.

General Instructions:

The PRECIMA twin brakes are used for applications with high demands on safety. Two spring loaded brakes working independently of each other are preferred for the use in stage constructions and elevators. These brakes have been granted to the high rating of EN 81 for elevator brakes.

The standard version of the twin brake is supplied with preset fixed braking torque. Brake torque reduction should only be made with confirmation of the manufacturer. Brake torque and operating voltage are signed on the face of the brake body and must also be signed on the data label of the motor.

Caution: The adjustment of the hand release may not be changed, not even when air gap "a" is readjusted, as security can be adversely affected. Maintenance may only be done by qualified personal.



1. Assembly

Assembling conditions

- The friction areas must be kept free of oil and grease.
- Secure the counter surface is suitable (Steel or Cast Iron $Ra * 3,2 \mu m$). In case the counter surface is not suitable a friction plate must be provided.
- The Hub must be positioned to carry on the complete length of teeth.

Spring-loaded brake FDD

The brakes are supplied pre-assembled

1) Brake 1

- Circlip (Pos. 14) has to be fitted into the groove on the shaft.
- Fitted key (Pos. 15) fitted in the motor shaft.
- Push hub (Pos. 5) on to the shaft
- Secure hub (Pos. 5), using circlip (Pos. 16).
- If applicable, mount friction plate (Pos. 12).
- Push friction disc (Pos. 2) on to the hub (Pos. 5).
- Secure magnet assembly with three fixing screws, for tightening torque see table technical specification.
- Check airgap "a" as explained at Maintenance / Airgap setting

2) Flange

- Fit middle flange A to brake 1 with countersunk screws.
- Secure screws with bolt security glue (middle tight)
- Check tightening torque in table technical specification.

3) Brake 2

- Fit brake 2 as brake 1.
- Check airgap "a" as mentioned at Maintenance / Airgap setting

4) Electrical connection

DC power supply is necessary to operate brakes.

The operating voltage is marked on the brake body as well as on the motor.

Technical specification

Size	Braking torque M_{bN}^* (Nm)	P (W)	Fixing screws	Countersunk screws	Tightening torque M_A (Nm)
FDD 08	2 x 3,5	22	3 x M4	3 x M4	3
FDD 10	2 x 7	28	3 x M5	3 x M5	6
FDD 13	2 x 14	34	3 x M6	3 x M6	10
FDD 15	2 x 28	42	3 x M6	3 x M6	10
FDD 17	2 x 42	50	3 x M8	3 x M8	25
FDD 20	2 x 70	64	3 x M8	3 x M8	25
FDD 23	2 x 107	76	3 x M8	3 x M8	25
FDD 26	2 x 187	100	3 x M10	3 x M10	50
FDD 30	2 x 300	140	6 x M10	6 x M10	50

*braking torque after completion of running-in
Other braking torques are possible.

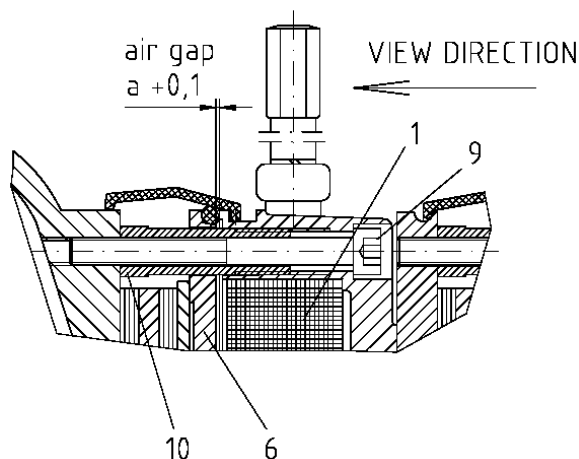
2. Operation

In the absence of current, the compression springs, present in the magnet body are pushing against the axially movable armature plate (Pos.6) which traps the friction disc against the motor housing surface. By applying direct current voltage to the coil a magnetic field is produced in the magnet body. The magnetic field attracts the armature plate (Pos.6) across the airgap "a" and allows the friction disc to rotate free and neutralizing the brake torque.

The inclusion of a hand release (Pos.4) assembly enables the brake to be mechanically ventilated. Pressing the hand release (Pos.4) causes the armature plate (Pos.6) to be pulled onto the magnet assembly (Pos.1). This produces an air gap between the rotor (Pos.2) and armature plate (Pos.6) and the brake is ventilated.

3. Maintenance / Air Gap Setting

Spring-loaded brakes are virtually maintenance-free. The air gap „a“ and thus the rotor wear must be checked at certain intervals and be adjusted if necessary, or the rotor (Pos. 2) replaced.



Resetting the braking clearance

When looking in the direction of the arrow the three fixing bolts (Pos.9) are to be loosened by one half of a turn.

The adjusting bolts (Pos.10) which surround the fixing bolts (Pos.9) can then be screwed into the magnet body (Pos.1) by turning anti-clockwise.

Turning the three fixing bolts (Pos.9) clockwise allows the magnet body (Pos.1) to be moved towards the armature plate until the nominal air gap is reached, as measured using a feeler gauge.

The three adjustment bolts are then also screwed clockwise out of the magnet body (Pos.1) until they but up. Finally, the fixing bolts (Pos.9) are retorqued. The air gap must then be rechecked.

FDD	08	10	13	15	17	20	23	26	30
$a_{Nom} +0,1$	0,2	0,2	0,3	0,3	0,3	0,4	0,4	0,5	0,5
a_{max}	0,7	0,8	0,8	0,9	1	1,1	1,1	1,2	1,2
min. rotor thickness	4,5	5,5	7,5	9,5	11,5	12,5	14,5	16,5	16,5

Dimensions in mm

4. Faults, Causes, Remedy

Attention! All maintenance and repair work must be made by qualified personnel and with the power to the spring-loaded brake switched off.

Faults	Cause	Remedy
Brake not ventilated	Air gap too large	Check air gap and adjust
	Brake not receiving electrical power	Check electrical connection
	Voltage to brake coil too small	Check connection voltage Of brake coil
	Armature plate mechanically blocked	Remove mechanical blockage
Brake ventilation delayed	Air gap too large	Check air gap and adjust
	Voltage to brake coil too small	Check connection voltage Of brake coil
	Damaged rectifier	Check rectifier

The spring-loaded brake has been built complying to the EG guidelines and standards:

- EG guideline for machines (89/392/EWG) & (91/368/EWG)
- EN 292 part 1 and part 2: safety of machines (fundamentals)
- EG guideline for electromagnetic compatibility (89/336/EWG), the user must ensure this guideline is observed by fitting the appropriate switch-gear.

The spring-loaded brake is not an independently operational machine and is designed to be installed inside another machine. Commissioning is prohibited until it has been determined that the other machine conforms to the EG guideline.

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